

# ENERGY MANAGEMENT SERVICES

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# Energy Management Services (EMS)

EMS is a type of performance contract used to install energy efficient facility improvements, with *no* up front cost, paid for out of *guaranteed energy savings* from your *existing* operating budget.



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# Industry Terms

- # **EMS:** Energy Management Services
- # **ESCO:** Energy Services Company
- # **O&M:** Operations and Maintenance
- # **M&V:** Measurement and Verification
- # **ECM:** Energy Conservation Measure
- # **IGA:** Investment Grade Audit
- # **RFP/RFQ:** Request for Proposal/Qualifications



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# Industry Terms

- ✚ Energy Baseline
- ✚ Savings carryover
- ✚ Savings shortfall
- ✚ Excess savings
- ✚ Measurement & verification - (FEMP)

# Energy Management Services (EMS)

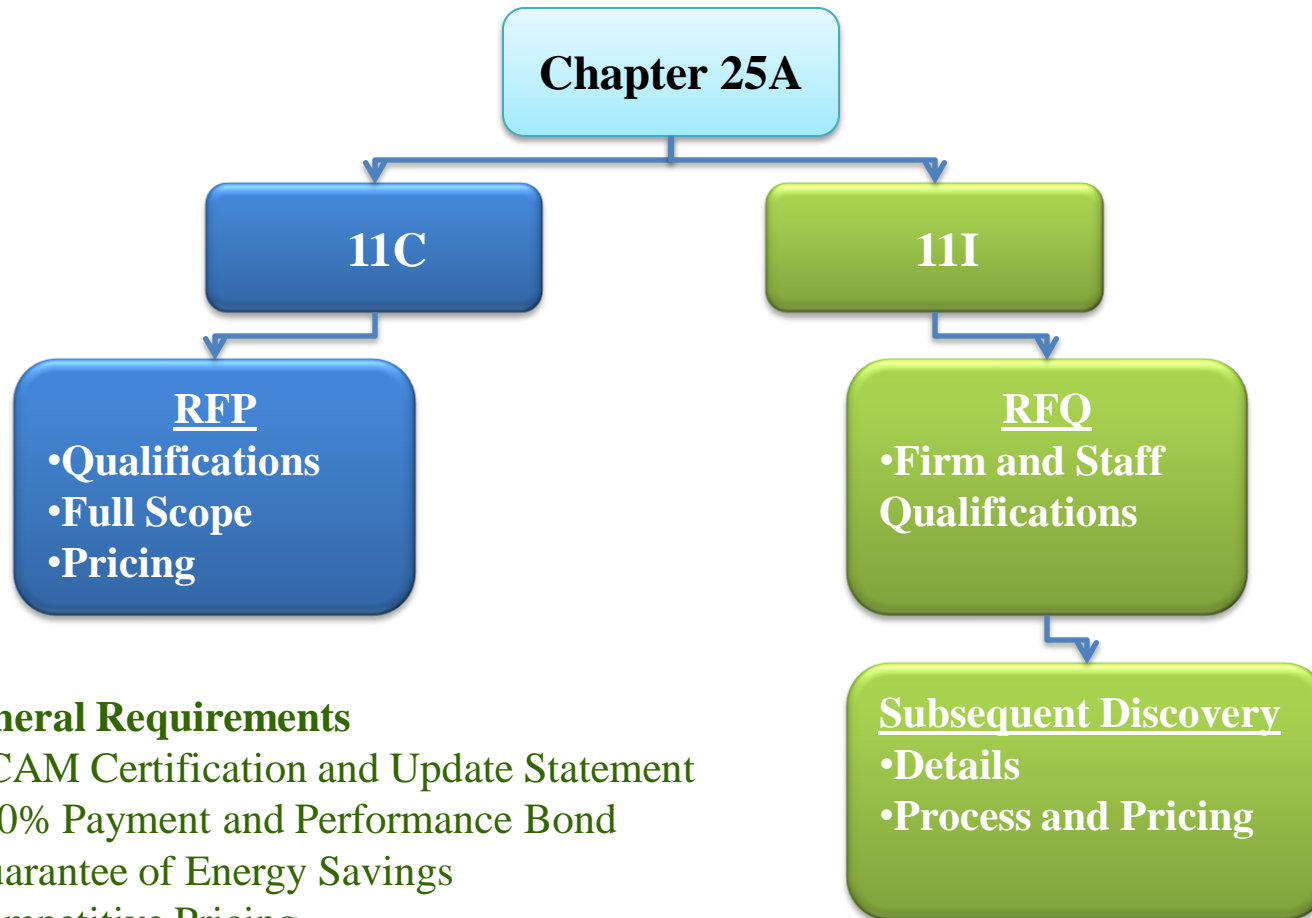
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# Procurement Process



## General Requirements

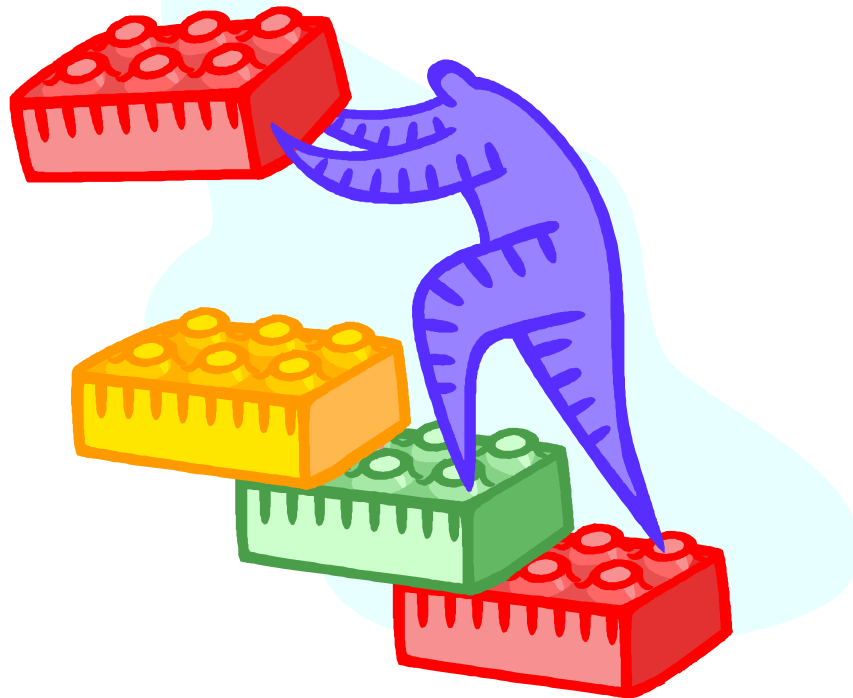
- DCAM Certification and Update Statement
- 100% Payment and Performance Bond
- Guarantee of Energy Savings
- Competitive Pricing
- Maximum 20 Year Term
- DOER Filing Requirements



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# Traditional Contract

Pay for activity



# Performance Contract

Pay for results



*Requires the ESCO to provide a performance-based guarantee*



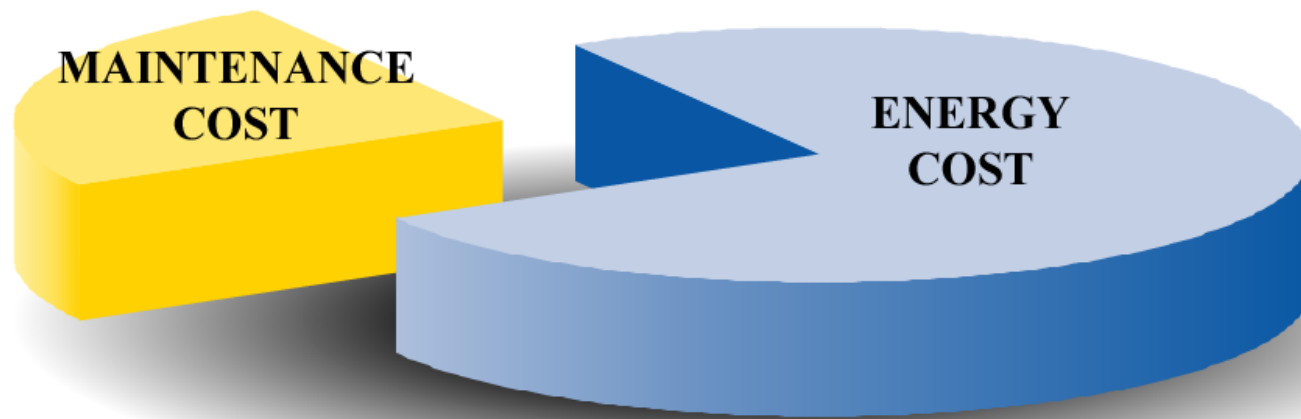
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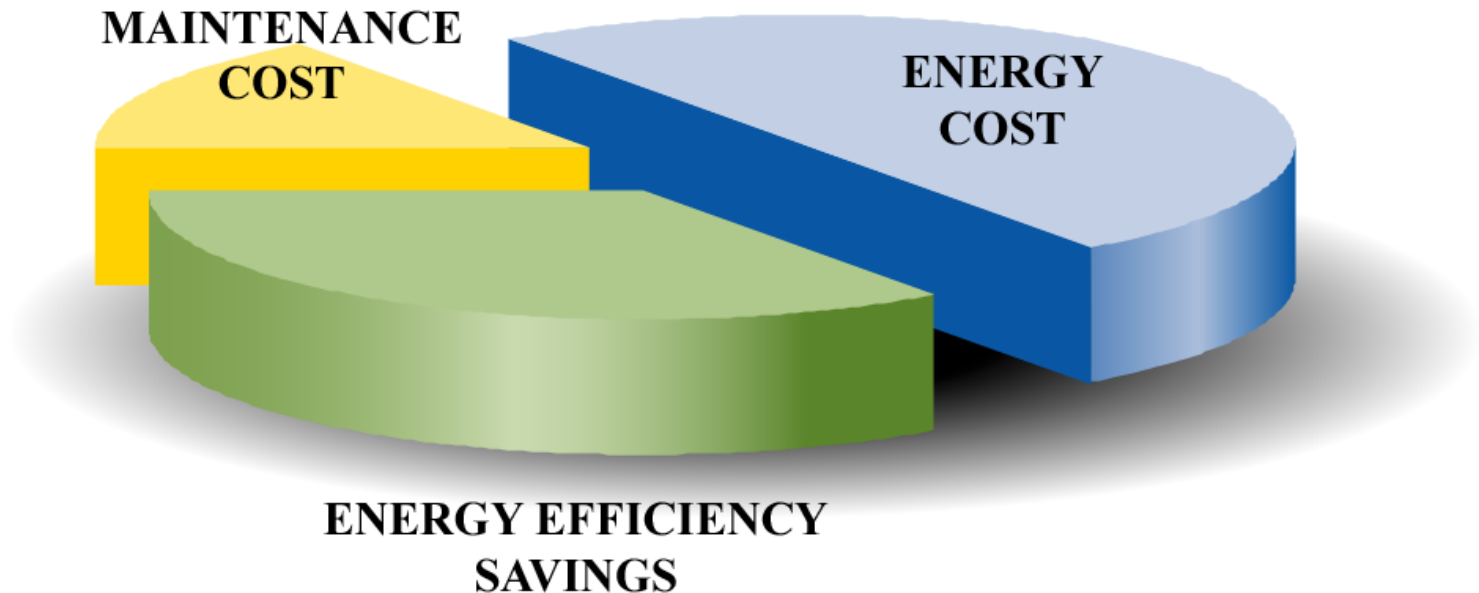
# Operating Budget=\$1m

**Before Improvements**



# Operating Budget=\$1m

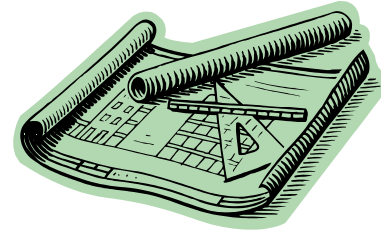
**After Improvements**



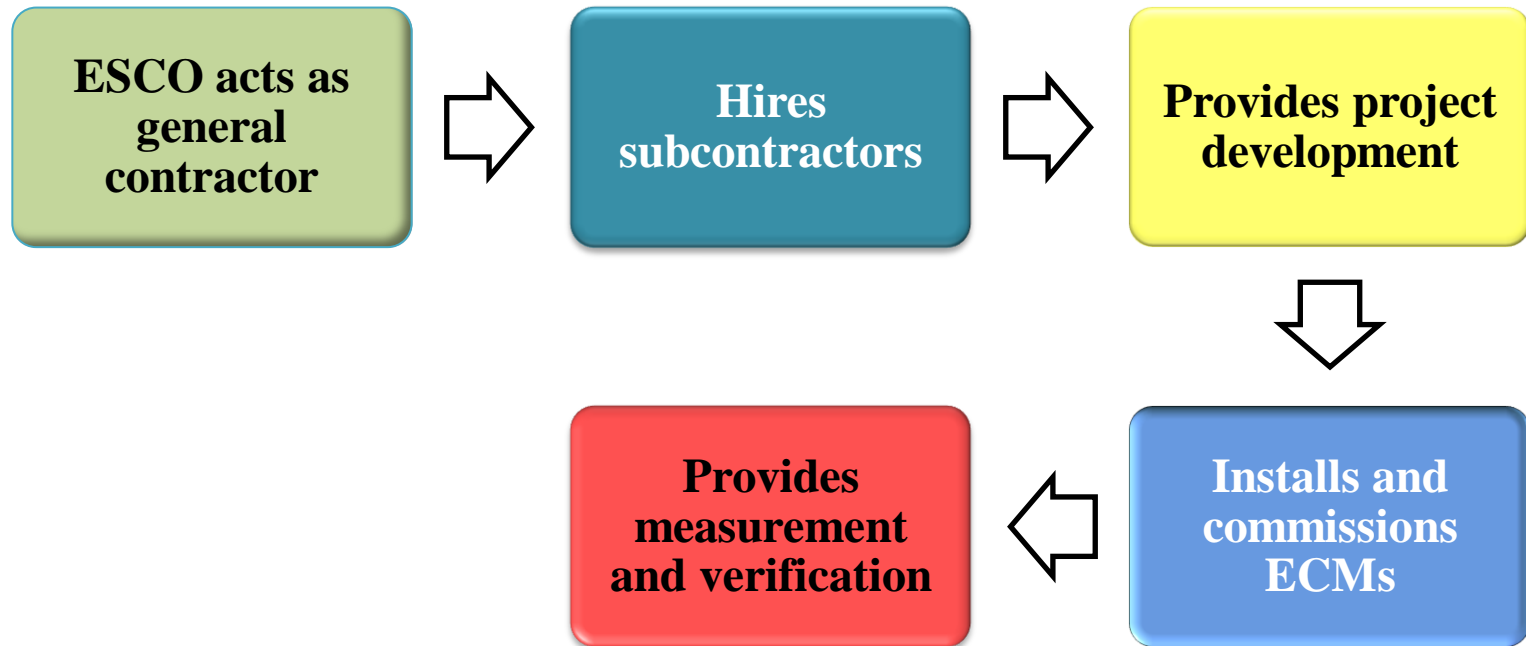
# Energy Services Company (ESCO)

ESCOs offer a broad range of services including,

- Engineering, feasibility studies, and investment grade energy audits
- Equipment acquisition and installation
- Load management
- Training
- Maintenance services
- Measurement and verification
- Guaranteed results



# ESCO Services



# Major Components



**Technical**



**Financial**



**Contractual**

# What can you purchase?

- ✚ Lighting
- ✚ Lighting controls
- ✚ Motors replacement
- ✚ Energy management system installation and optimization
- ✚ Variable frequency drives
- ✚ Hot water reset
- ✚ Control valves for boilers
- ✚ Water conservation
- ✚ Plug load controls (including PCs)
- ✚ Boiler replacement
- ✚ Green/renewable technologies

# Where does the money come from?

- ✚ Tax-exempt lease
- ✚ Municipal bond
- ✚ Grants
- ✚ Capital improvement
- ✚ Rebates and incentives



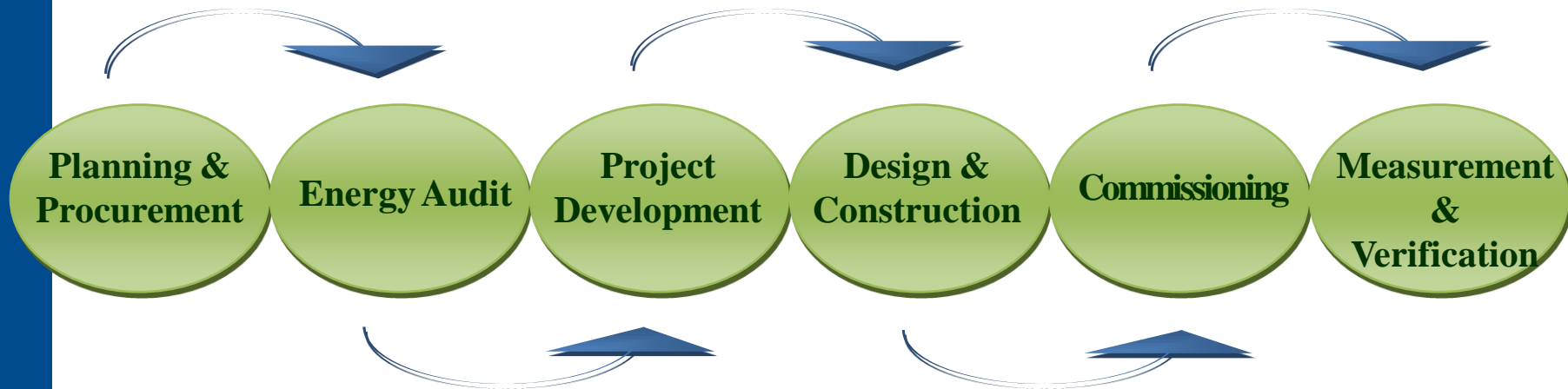
# What are the commercial terms?

- ✦ How are you buying this?
- ✦ How do we measure success?
- ✦ What are the details of the guarantee?
- ✦ When do you start to pay?
- ✦ What happens if....?
  - Hotter/Colder
  - Energy prices change
  - Excess savings/shortfall
  - Eliminate buildings
  - Schedule changes

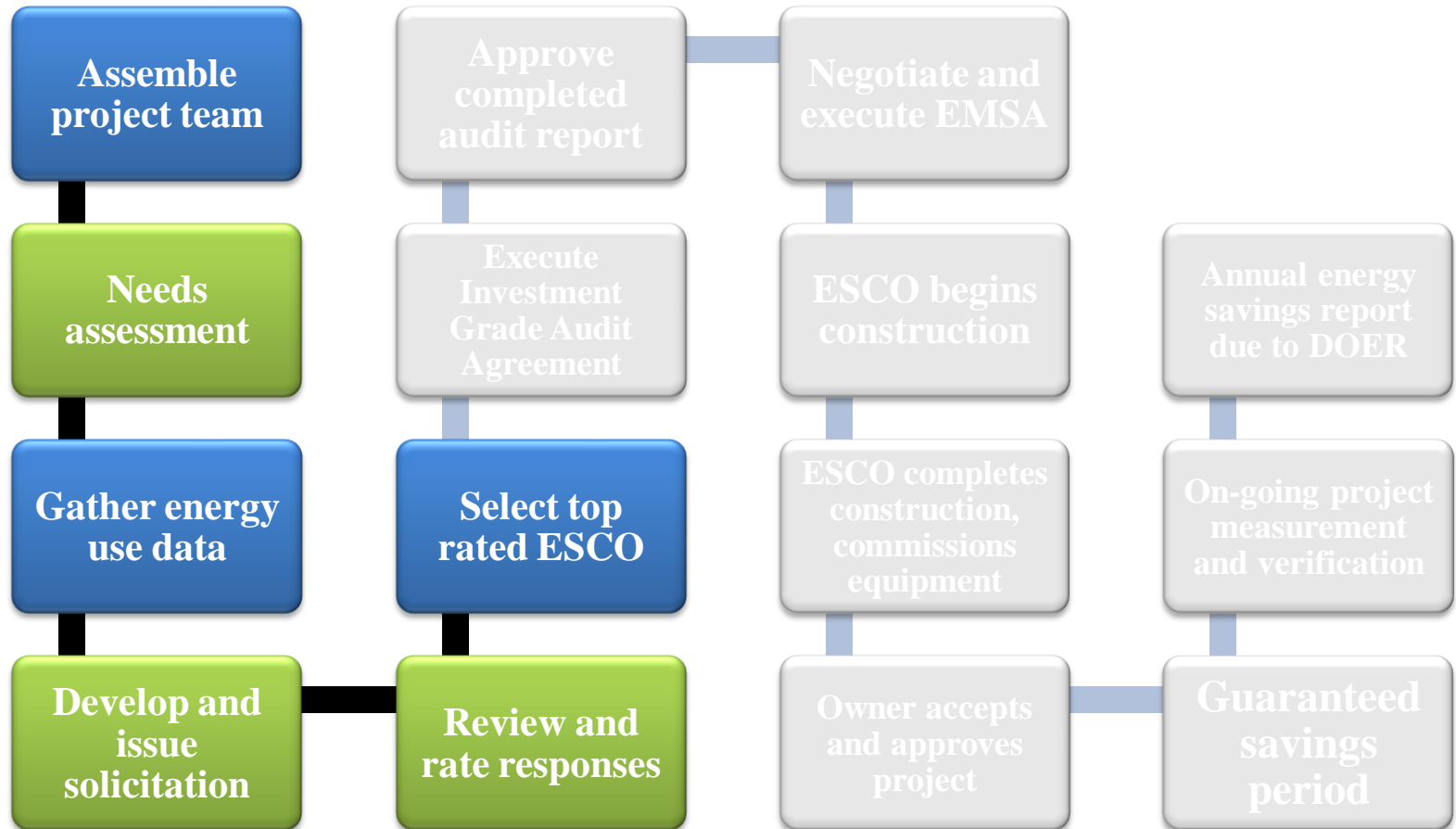




# Procurement Process



# Planning and Procurement



# Assemble Project Team

- ✚ Financial
- ✚ Operational
- ✚ Administration
- ✚ Legal
- ✚ Procurement



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# Needs Assessment

- ✚ Energy Baseline
- ✚ Project Size
- ✚ Objectives/constraints
- ✚ Owner's Agent

# Energy Baseline

- ✚ Two to three years of energy usage
- ✚ Include all energy types
- ✚ Building description
- ✚ Include square feet, type, and occupancy

# MassEnergyInsight

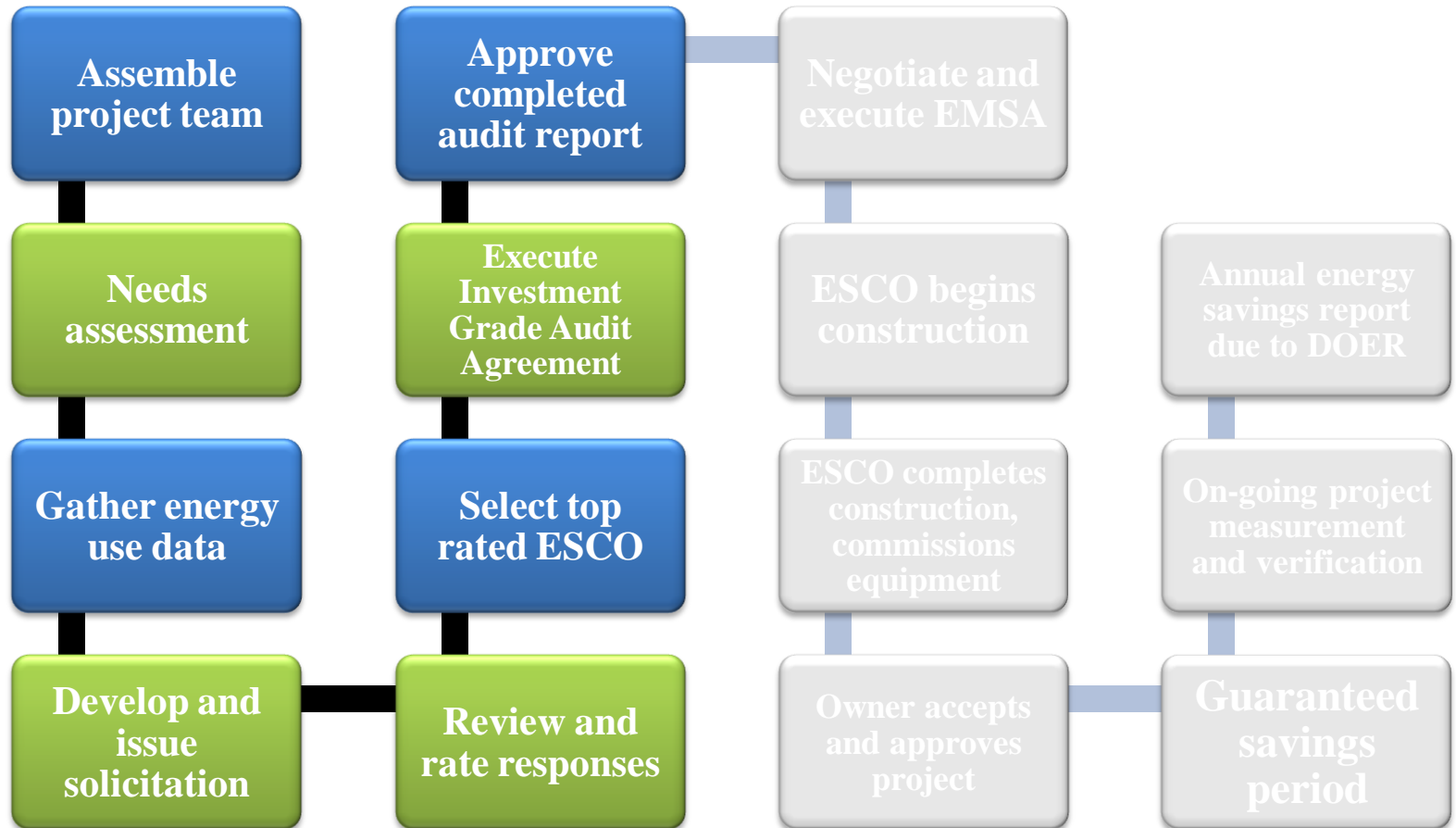
● ● ● ● ● POWERING EFFICIENCY

- ✚ Free web-based tool
- ✚ Automatic updates of gas/elec data
- ✚ Measure & benchmark energy
- ✚ Plan energy efficiency projects

# Develop & Issue RFP/RFQ

- ✚ Mandatory Requirements
- ✚ Use DOER Model Documents
- ✚ File according to instructions on web page.
- ✚ Contact DOER

# Procurement Process

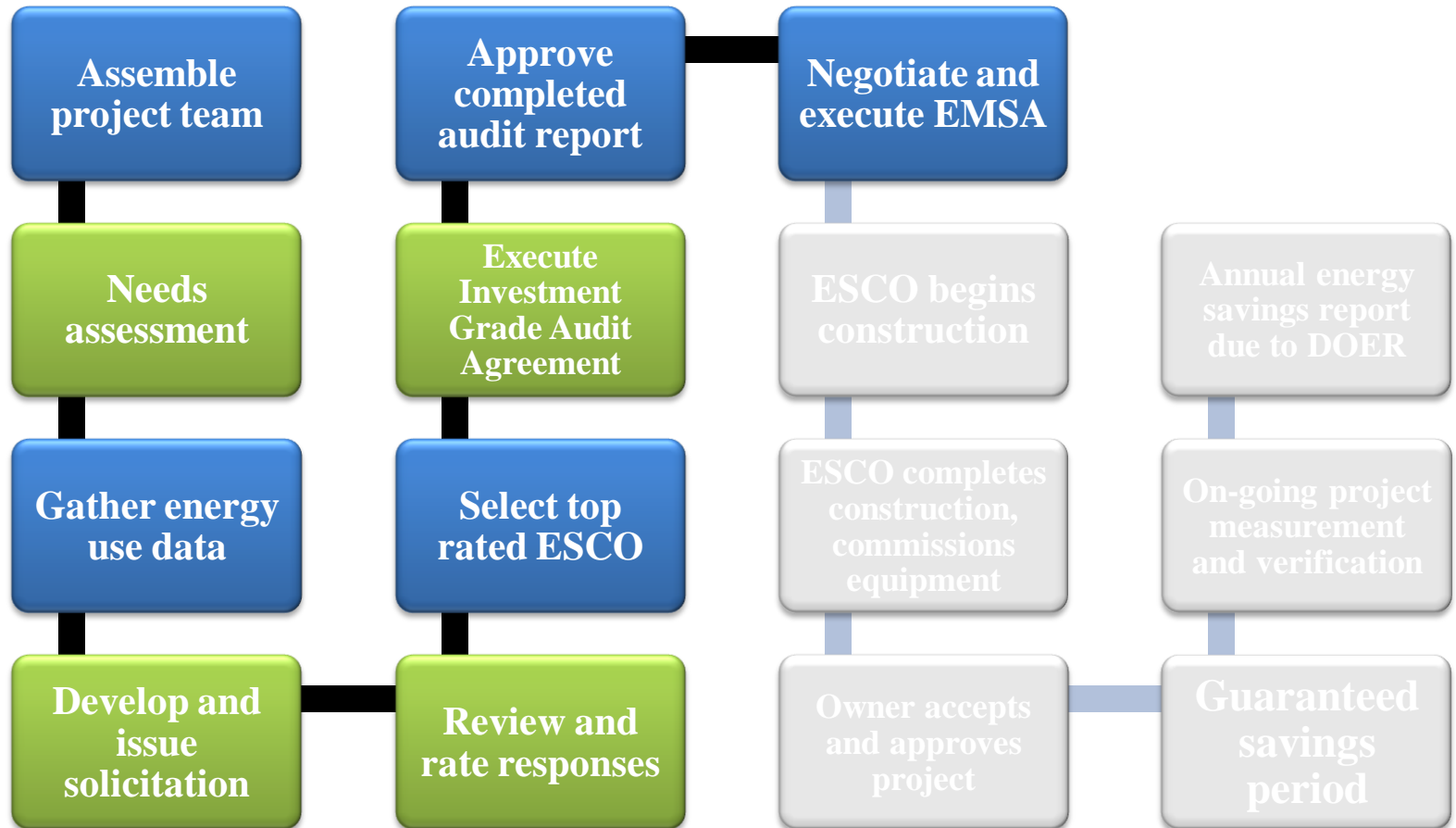




# Investment Grade Energy Audit

- ✚ Defines the scope of the project
- ✚ Defines the FEMP M&V option
- ✚ Provides:
  - List of measures
  - Total project savings
  - Estimates total project costs
  - The documented baseline values used to guarantee savings.

# Procurement Process



# Negotiate Contract

## ✚ Energy Management Services Agreement

- Construction
- Commissioning
- Training
- Operations and Maintenance
- Measurement and Verification



## ✚ Financing

- How do you pay for it?

# Procurement Process



# Design & Construction

- ✦ Implementation schedule
- ✦ Define obligation and responsibilities
- ✦ Progress Meetings
- ✦ Communicate project progress to stakeholders

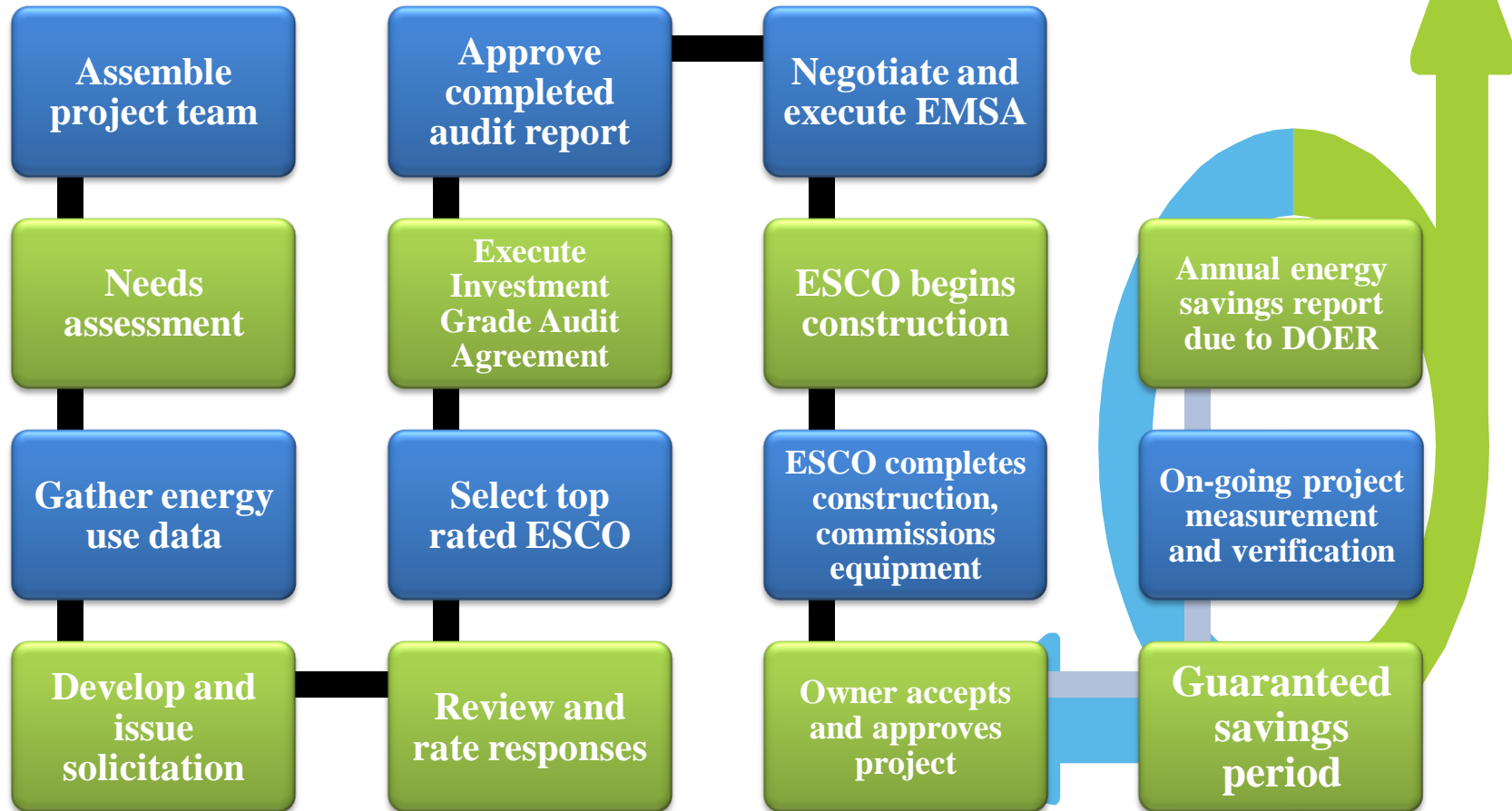


# Project Acceptance

- ✚ Owner acknowledges receipt of the Energy Conservation Measure(s) as fully installed, inspected, and in good working condition.
- ✚ Owner does not accept ECMs



# Procurement Process



# Measurement and Verification

An M&V is central to proper savings determination and the basis for verification. The M&V fundamentally defines the meaning of the word ‘savings’ for each project.



# Challenges

- ✦ Internal stakeholder objections and delays
- ✦ Extended negotiations
- ✦ Verification of ESCO's cost proposal
- ✦ Required maintenance agreements
- ✦ Savings reconciliation vs. budget cycle

# Keys to a Successful Project

1. Consult with in-house technical staff familiar with other construction projects.
2. Involve key decision-makers.
3. Assign a project manager to coordinate all aspects of the project from inception.



# Keys to a Successful Project

4. Organize a team and include finance, technical, procurement, and legal staff.
5. Seek an owner's agent familiar with this type of project.



# Keys to a Successful Project

6. Develop an energy use baseline
7. Define your project: keep overall goals in mind, prioritize improvements, and understand expectations.



# Keys to a Successful Project

8. Create accountability by documenting procedures and changes.
9. Adhere to state procurement laws
10. Use DOER model documents.
11. Follow best practices



# Questions



# Contact Information

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[mass.gov/energy-management-services\\_public-procurement](https://mass.gov/energy-management-services_public-procurement)

**“Energy Management Services”**